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<b>(21) International Application Number:</b> PCT/AU93/00608 <b>(22) International Filing Date:</b> 29 November 1993 (29.11.93) <b>(30) Priority Data:</b> PL 6879 20 January 1993 (20.01.93) AU <b>(71)(72) Applicants and Inventors:</b> JAMES, Frank, Robert [AU/AU]; 1/15 Lyndhurst Street, Glebe, NSW 2037 (AU). JAMES, Warren, Robert [AU/AU]; P.O. Box 52, Prahran, VIC 3181 (AU). <b>(74) Agent:</b> F B RICE & CO; 28A Montague Street, Balmain, NSW 2041 (AU).		<b>(81) Designated States:</b> AT, AU, BB, BG, BR, BY, CA, CH, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, KZ, LK, LU, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, UA, US, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i>
<b>(54) Title:</b> CARD WITH SEEDS  <b>(57) Abstract</b>  A novelty item in the form of a card which term includes a greeting card, postcard, label, item of stationery, pamphlet or the like having incorporated in it a plurality of viable plant seeds the composition of the paper being compatible with the germination of the seeds in the presence of water.		

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CARD WITH SEEDS

The present invention is directed to a novelty item, in the form of a card, which term as used in the present specification includes a greeting card, postcard, label, 5 item of stationery, pamphlet or the like which has incorporated in it a viable plant seed or seeds which can be caused to germinate when required. Cards according to the present invention are formed substantially from paper and the seed is included within the structure of the card.

10 The card, for example, a greeting card, can include a decoration, a printed message, or it can be written on and additionally, the card, when placed into a suitable seed raising medium which will allow the seeds to germinate, will produce seedlings. Depending on the actual type of 15 seed incorporated into the card, the seeds may or may not be visible to the naked eye; where a card according to the invention is in the form of a label or pamphlet it may be printed with advertising and promotional material.

A card may optionally include a fertiliser and/or 20 growth factors suitable for seed germination and plant growth.

It is envisaged that a card according to the present invention may be made substantially from recycled paper material.

25 In one aspect, the present invention consists in a card comprising paper and a plurality of viable seeds in combination. The term "paper" as used herein refers to any product containing paper fibres and includes cardboard, newspaper, fibre packaging and recycled paper.

30 In a preferred embodiment of this aspect of the invention at least one surface of the card has writing and/or decoration printed thereon. Preferably, the card is folded to form a greeting card.

In another preferred embodiment of this aspect of the 35 invention the card further includes fertiliser and/or

growth factors. Preferably, the fertiliser and/or growth factors are present as a coating on the seed.

If required, the seed in the card may be fumigated so that the card is suitable for sending to other countries.

5 In a second aspect the present invention consists in a method of producing a card according to the first aspect of the invention, comprising:-

1. Producing a pulp substantially of paper fibres;
2. Forming the fibres into a paper sheet;
- 10 3. Adding viable seed to the fibre pulp or the formed sheet such that the seeds are essentially contained within the structure of the paper sheet; and
4. Drying the paper sheet.

The seeds may be added either prior to forming the  
15 prepared sheet or alternatively the seeds may be sprinkled onto an already formed sheet. In the latter case, it is preferred that another paper sheet is placed on top of the paper sheet containing the seeds, such that the seeds are essentially sandwiched between two paper sheets.

20 Hereinafter, given by way of example only, is a preferred embodiment of the present invention. The following description is not intended to be limiting in terms of the scope of the present invention, but merely representative of a preferred greeting card and method of  
25 producing a card according to the present invention.

A card according to the present invention can be prepared most simply from recycled materials such as, paper, newspaper, cardboard, fibre packaging, etc. and viable plant seed. The steps in the production of the  
30 card are as follows:-

1. Production of pulp:-  
Paper material is soaked in water for sufficient time to soften the paper fibres. The soaked paper is blended with water to produce a paper pulp.
- 35 2. The paper pulp is filled into a sink or basin as a

- dilute water suspension. Pulp fibres are formed into a sheet on a fine screen by passing the screen through the dilute fibre/water suspension and removing the screen from the sink and allowing the screen to drain (but not dry out) for a short period.
- 5        3. Depending on the nature of the seed, viable plant seeds can be sprinkled onto the surface of a first paper sheet (formed as above) and a second paper sheet (as above) is placed on top by inverting a
- 10       sheet formed on a screen and immediately removing the screen, thereby effectively sandwiching the seeds between two paper sheets. In some cases, it may be preferred to add the seed to the dilute pulp/water suspension prior to forming the fibres into a flat
- 15       sheet, such that the seeds are effectively embedded in the fibre matrix of the paper sheet.
4. The paper sheet with seed is dried and the dried paper with seed is removed from the screen. The paper/seed card can optionally be trimmed, folded,
- 20       printed etc as required. It is preferred that the paper/seed card thus produced is packed so that the seed is kept fresh and is protected, such as by packaging the card in a cello wrap. Preferably, the card is packaged as a kit, together with a suitable
- 25       envelope and instructions for germination of the seeds.

The card containing the seed can optionally be further processed as required, such as by folding into substantially equal sections to form a card which can be

30       opened, or the card can have a message and/or decoration printed thereon.

The seed used in the manufacture of the card according to the present invention can be optionally fumigated in case the card is to be sent overseas.

35       Cards according to the invention may be manufactured

in a variety of ways other than that described above. Where cards are to be manufactured on a large scale, use will be made of conventional paper making equipment modified to enable seeds to be added to the paper pulp before the drying process. Cards may be made not only by pressing seeds between sheets of wet paper as proposed above but by incorporating them between two sheets of dry paper secured together by means of a glue that does not affect the germination of the seeds. For example, a flour based glue would be suitable. Where manufacture is carried out in large sheets these are subsequently cut to size to form a card appropriate to the intended use.

Optionally, a fertiliser and/or growth hormones can be incorporated into the card, preferably as a coating to the seed.


A card according to the present invention can be easily written on and sent through the mail (for example) in the same way as any greeting card.

To germinate the seeds the card is placed flat into a suitable seed raising container and lightly covered with a suitable seed raising mixture. The actual method of obtaining germination of the seeds may differ, depending on the requirements of the seeds incorporated into the card.

It will be appreciated by persons skilled in the art that numerous variations and/or modifications may be made to the invention as shown in the specific embodiments without departing from the spirit or scope of the invention as broadly claimed. The present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive.

## CLAIMS:

1. A card as hereinbefore defined of paper having incorporated in it a plurality of viable seeds the composition of the paper being compatible with the germination of the seeds in the presence of water.
2. A card as claimed in claim 1 wherein the card is a card having writing and/or decoration printed thereon.
3. A card as claimed in claim 2 wherein printing on the card includes instructions for germinating the seeds therein.
4. A card as claimed in claim 1 or claim 2 or claim 3 wherein there is incorporated in the card substances tending to promote the growth of plants from the seeds when germinated.
5. A card as claimed in claim 4 wherein the said substances are present as a coating on the seed.
6. A card as claimed in any one of the preceding claims wherein the paper consists of two layers laminated together with the seeds sandwiched between the layers.
7. A card as claimed in any one of the preceding claims packaged in a moisture impervious material together with instructions for causing germination of the seeds to take place.
8. A card as claimed in claim 5 wherein the package includes an envelope for the dispatch of the card.
9. A card as claimed in any one of the preceding claims made from recycled material.
10. A method of producing a card according to claim 1 comprising
  1. Producing a pulp substantially of paper fibres;
  2. Forming the fibres into a paper sheet;
  3. Adding viable seed to the fibre pulp or the formed sheet such that the seeds are essentially contained within the structure of the paper sheet; and
  4. Drying the paper sheet.

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> Int. Cl. <sup>5</sup> B42D 15/02, A01C 1/04  According to International Patent Classification (IPC) or to both national classification and IPC				
<b>B. FIELDS SEARCHED</b>  Minimum documentation searched (classification system followed by classification symbols) IPC: A01C 1/04  Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched AU: IPC A01C 1/04  Electronic data base consulted during the international search (name of data base, and where practicable, search terms used) Derwent: A01C 1/04 Derwent: B42D 15/00, 15/02, seed				
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>				
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.		
X, Y	NL 7802783 (A.P. Kamp-Sint) 18 September 1979 (18.09.79) whole document	1-10		
X, Y	EP 514811 (Columbo & Garbuglio) 25 November 1992 (25.11.92) whole document	1-10		
X, Y	US, A, 4080755 (Crosby) 28 March 1978 (28.03.78) whole document	1-10		
X, Y	US, A, 3908308 (Meyers) 30 September 1975 (30.09.75) whole document	1-10		
<div style="display: flex; justify-content: space-between;"> <div> <input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.         </div> <div> <input checked="" type="checkbox"/> See patent family annex.         </div> </div>				
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;">           * Special categories of cited documents :            "A" document defining the general state of the art which is not considered to be of particular relevance            "E" earlier document but published on or after the international filing date            "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)            "O" document referring to an oral disclosure, use, exhibition or other means            "P" document published prior to the international filing date but later than the priority date claimed         </td> <td style="width: 50%; vertical-align: top;">           "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention            "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone            "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art            "&amp;" document member of the same patent family         </td> </tr> </table>			* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family
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Date of the actual completion of the international search 20 January 1994 (20.01.94)		Date of mailing of the international search report 25 FEB 1994 (25.02.94)		
Name and mailing address of the ISA/AU  AUSTRALIAN INDUSTRIAL PROPERTY ORGANISATION PO BOX 200 WODEN ACT 2606 AUSTRALIA  Facsimile No. (06) 2853929		Authorized officer   <b>R. KIRBY</b>  Telephone No. (06) 2832369		

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate of the relevant passages	Relevant to Claim No.
X,Y	US,A,4418497 (Mastriano) 6 December 1983 (06.12.83) whole document	1-10
X,Y	AU,A,74100/91 (Archer) 10 October 1991 (10.10.91) whole document	1-10
X,Y	AU,A,67764/81 (Wilkinson Sword Ltd.) 17 September 1981 (17.09.81) whole document	1-10
X,Y	JP,1-240108 (KOBASHI KOGYO CO. LTD.) 25 September 1989 (25.09.89)	1-10
Y	AU,B,15226/66 (403653) (Waldo Rohnert Company) 13 June 1968 (13.06.68) whole document	1-10
Y	AU,A,52189/79 (Edet AB) 8 May 1980 (08.05.80) whole document	1-10
Y	AU,A,15561/53 (Rudolf Eitzkorn) 26 March 1953 (26.03.53) whole document	1-10
Y	AU,B,70810/74 (486016) (Canada Wire & Cable Ltd.) 8 January 1976 (08.01.76) page 3	1-10
Y	AU,A,64252/80 (Pederson) 20 May 1982 (20.05.82) whole document	1-10

Patent Document Cited in Search Report		Patent Family Member					
EP	514811	EP	572504	WO	92/14386		
US	3908308	FR	2185341	JP	49099823	US	3846954
		BR	7306515	DE	2339304	DK	5563/73
		IL	42680	IT	996723	NL	7311233
AU	70810/74	CA	970567	DE	2435393	FR	2238416
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		DK	4813/81	DK	151441	EP	47259
		ES	294394	GB	2071473	GR	74852
		IE	50688	IT	8120044	IT	1138973
		JP	57500181	JP	63052844	LU	83181
		NZ	196394	PT	72615	WO	81/02503
		ZA	8101349				
AU	52189/79	GB	2035283	CA	1120759	DE	2942321
		DK	4340/79	FI	793193	FR	2440438
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		NL	7907719	NO	793309	NO	149039
		SE	7811265	SE	425571	US	4283880
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